California Regional Water Quality Control Board
North Coast Region

ORDER NO. R1-2002-0014
ID NO. 1B86002RSON

NOTIFICATION, MONITORING, AND REPORTING PROGRAM

FOR

GEYSERS POWER COMPANY, LLC

(GEYSERS DISTRIBUTION PIPELINE SYSTEM AND INJECTION PROJECT)

THE GEYSERS

Sonoma County

NOTIFICATION

A. PRIOR TO CONSTRUCTION

The discharger shall submit a notice in writing to the Regional Water Board at least fourteen days prior to any construction activities associated with road construction, drill site preparation, well drilling, well re-working, well abandonment, or modification to the wastewater injection distribution system. The notice shall include:

1. Proposed construction dates,
2. Location of the facilities,
3. Description of the facilities,
4. Method(s) of construction, and
5. Proposed location of ultimate disposal of excess or waste earthen materials and drill cuttings.

B. CIRCULATION LOSS

The discharger shall immediately notify the Regional Water Board of any circulation loss during the construction of a well at depths less than 300 feet. The notice shall include:

1. Location of the well,
2. Well depth at the circulation loss,
3. Amount of drilling mud lost, and
4. Method of correction.

MONITORING

Injection Fluids

A. COOLING TOWER BASIN CONDENSATE

Samples of geothermal steam condensate shall be collected semiannually (January and July) from each cooling tower basin at Units 5&6, 7&8, 9&10, 11, 12, 14, 17, 18, 20, and the Sonoma Unit and analyzed for the following constituents:

Constituents	Units	Type of Sample	Sampling Frequency
pH	pH units	grab	semiannual
Specific Conductivity	microhms	grab	semiannual
Temperature	C^o	grab	semiannual
Ammonia	mg/L	grab	semiannual
Chlorides	mg/L	grab	semiannual
Nitrate	mg/l	grab	semiannual
Nitrite	mg/L	grab	semiannual
Antimony	ug/L	grab	semiannual
Arsenic	ug/L	grab	semiannual
Beryllium	ug/L	grab	semiannual
Boron	mg/L	grab	semiannual
Cadmium	ug/L	grab	semiannual
Cobalt	ug/L	grab	semiannual
Copper	ug/L	grab	semiannual
Chromium	ug/l	grab	semiannual
Mercury	ug/l	grab	semiannual
Iron	ug/L	grab	semiannual
Lead	ug/L	grab	semiannual
Molybdenum	ug/L	grab	semiannual
Nickel	ug/L	grab	semiannual
Selenium	ug/L	grab	semiannual
Silver	ug/l	grab	semiannual
Thallium	ug/L	grab	semiannual
Vanadium	ug/L	grab	semiannual

B. TERMINATION RESERVOIR EFFLUENT DISCHARGE

Samples of the Termination Reservoir effluent discharge shall be collected semiannually (January and July) and analyzed for the following constituents:

Constituents	Units	Type of Sample	Sampling Frequency
pH	pH units	grab	semiannual
Specific Conductivity	microhms	grab	semiannual
Temperature	C^o	grab	semiannual
Ammonia	mg/L	grab	semiannual

Constituents	Units	Type of Sample	Sampling Frequency
Chlorides	mg/L	grab	semiannual
Nitrate	mg/l	grab	semiannual
Nitrite	mg/L	grab	semiannual
Residual chlorine	mg/L	grab	semiannual
Antimony	ug/L	grab	semiannual
Arsenic	ug/L	grab	semiannual
Beryllium	ug/L	grab	semiannual
Boron	mg/L	grab	semiannual
Cadmium	ug/L	grab	semiannual
Cobalt	ug/L	grab	semiannual
Copper	ug/L	grab	semiannual
Chromium	ug/l	grab	semiannual
Mercury	ug/l	grab	semiannual
Iron	ug/L	grab	semiannual
Lead	ug/L	grab	semiannual
Molybdenum	ug/L	grab	semiannual
Nickel	ug/L	grab	semiannual
Selenium	ug/L	grab	semiannual
Silver	ug/l	grab	semiannual
Thallium	ug/L	grab	semiannual
Vanadium	ug/L	grab	semiannual

C. LCSDSRWS PIPELINE EFFLUENT

Samples of the LCSDSRWS Pipeline effluent discharge shall be collected semiannually (January and July) and analyzed for the following constituents:

Constituents	Units	Type of Sample	Sampling Frequency
pH	pH units	grab	semiannual
Specific Conductivity	microhms	grab	semiannual
Temperature	C^o	grab	semiannual
Ammonia	mg/L	grab	semiannual
Chlorides	mg/L	grab	semiannual
Nitrate	mg/l	grab	semiannual
Nitrite	mg/L	grab	semiannual
Residual chlorine	mg/L	grab	semiannual
Antimony	ug/L	grab	semiannual
Arsenic	ug/L	grab	semiannual
Beryllium	ug/L	grab	semiannual
Boron	mg/L	grab	semiannual
Cadmium	ug/L	grab	semiannual
Cobalt	ug/L	grab	semiannual
Copper	ug/L	grab	semiannual
Chromium	ug/l	grab	semiannual
Mercury	ug/l	grab	semiannual

Constituents	Units	Type of Sample	Sampling Frequency
Iron	ug/L	grab	semiannual
Lead	ug/L	grab	semiannual
Molybdenum	ug/L	grab	semiannual
Nickel	ug/L	grab	semiannual
Selenium	ug/L	grab	semiannual
Silver	ug/l	grab	semiannual
Thallium	ug/L	grab	semiannual
Vanadium	ug/L	grab	semiannual

D. ACTIVE INJECTION WELLS INJECTATE

Samples of the active injection well injectate shall be collected semiannually (January and July) from one active injection well in each Unit's steamfield, representative of field activities and injectate chemistry. The samples shall be analyzed for the following constituents:

Constituents	Units	Type of Sample	Sampling Frequency
pH	pH units	grab	semiannual
Specific Conductivity	microhms	grab	semiannual
Temperature	C^o	grab	semiannual
Ammonia	mg/L	grab	semiannual
Chlorides	mg/L	grab	semiannual
Nitrate	mg/l	grab	semiannual
Nitrite	mg/L	grab	semiannual
Antimony	ug/L	grab	semiannual
Arsenic	ug/L	grab	semiannual
Beryllium	ug/L	grab	semiannual
Boron	mg/L	grab	semiannual
Cadmium	ug/L	grab	semiannual
Cobalt	ug/L	grab	semiannual
Copper	ug/L	grab	semiannual
Chromium	ug/l	grab	semiannual
Mercury	ug/l	grab	semiannual
Iron	ug/L	grab	semiannual
Lead	ug/L	grab	semiannual
Molybdenum	ug/L	grab	semiannual
Nickel	ug/L	grab	semiannual
Selenium	ug/L	grab	semiannual
Silver	ug/l	grab	semiannual
Thallium	ug/L	grab	semiannual
Vanadium	ug/L	grab	semiannual

Injection Fluids Volume Monitoring

The gallons of geothermal steam condensate, Termination Reservoir effluent discharge (City of Santa Rosa's treated effluent), and LCSDSRWS's pipeline effluent discharge and a totalized fluid volume shall be recorded. Injectate gallons discharged to each injection well shall be recorded.

Accidental Spill Monitoring

In the event of an accidental spill of any liquid waste to surface waters, the discharger shall implement the following monitoring program:

Constituents	Sampling Location	Units	Type of Sample
pH	001, 002, 003	pH units	grab
Specific Conductivity	001, 002, 003	microhms	grab
Temperature	001, 002, 003	C^o	grab
Ammonia	001, 002, 003	mg/L	grab
Chlorides	001, 002, 003	mg/L	grab
Nitrate	001, 002, 003	mg/l	grab
Nitrite	001, 002, 003	mg/L	grab
Antimony	001, 002, 003	ug/L	grab
Arsenic	001, 002, 003	ug/L	grab
Beryllium	001, 002, 003	ug/L	grab
Boron	001, 002, 003	mg/L	grab
Cadmium	001, 002, 003	ug/L	grab
Cobalt	001, 002, 003	ug/L	grab
Copper	001, 002, 003	ug/L	grab
Chromium	001, 002, 003	ug/l	grab
Mercury	001, 002, 003	ug/l	grab
Iron	001, 002, 003	ug/L	grab
Lead	001, 002, 003	ug/L	grab
Molybdenum	001, 002, 003	ug/L	grab
Nickel	001, 002, 003	ug/L	grab
Selenium	001, 002, 003	ug/L	grab
Silver	001, 002, 003	ug/l	grab
Thallium	001, 002, 003	ug/L	grab
Vanadium	001, 002, 003	ug/L	grab
Turbidity	001, 002, 003	NTU	grab
Settleable Matter	001, 002, 003	mg/L	grab
Fish Bioassay*	001, 002, 003	96-hour percent survival	grab

- Rainbow Trout, Oncorhynchus mykiss, shall be used as the test fish and the test temperature shall be maintained between 14^o and 17^oC.

Sampling Location 001 shall be at the source of the spill and shall be representative of the material spilled. It shall be sampled once as soon after the spill as possible.

Sampling Location 002 shall be in the affected stream at a point upstream from the area influenced by the spill and shall be sampled once as soon after the spill as possible.

Sampling Location 003 shall be in the affected stream within the zone influenced by the spill and shall be relocated as that influenced zone proceeds downstream. It shall be sampled once each six hours beginning as soon after the spill as possible and continuing for as long as the spill can be traced, but not to exceed four samples unless directed to continue by the Executive Officer.

REPORTING

Monthly Reporting

The following monitoring results and reports related to the construction and maintenance of The Geysers distribution pipeline shall be submitted monthly to the Regional Water Board at the end of the following month:

1. Gallons of geothermal steam condensate, Termination Reservoir effluent discharge, and LCSDSRWS's pipeline effluent discharge and a totalized fluid volume.

2. Injectate gallons discharged to each injection well.

3. Summary of spills.

4. Total volume of disposed construction and maintenance spoils materials for each disposal area. Location of the receiving disposal area(s) shown on a map.

5. Discussion of pertinent field activities and problems encountered.

Semiannual Reporting

The following monitoring results shall be submitted semiannually to the Regional Water Board at the end of March and August:

1. Steam condensate sampling results from Units 5&6, 7&8, 9&10, 11, 12, 14, 17, 18, 20, and the Sonoma Unit.

2. Sampling results from the Termination Reservoir effluent discharge.

3. Sampling results from the LCSDSRWS Pipeline effluent discharge.

4. Samples results from the active injection well injectate from one active injection well in each Unit's steamfield, representative of field activities and injectate chemistry.

Annual Reporting

The Discharger shall implement the mitigations as described in finding 37 of the Waste Discharge Requirements and report to the Regional Water Board on September 1 each year following the adoption of this permit on the application of each mitigation measure.

Accidental Spill Notification and Reporting

The Regional Water Board shall be immediately notified of a spill of any liquid waste as soon as practical and no later than 12 hours after the initial spill discovery.

Reporting Thresholds:

1. Immediate telephone notification is required for any spill under 100 gallons that does not result in a discharge to surface waters.

2. Immediate telephone notification and submittal of a written report describing the incident within in two weeks is required for any spill over 100 gallons.

3. Immediate telephone notification and submittal of a written report describing the incident within in two weeks is required for any spill affecting surface water.

Report Format

The monitoring reports shall be arranged in tabular form so that the date, location, constituents, and the concentrations are readily discernible.

The results of any additional monitoring performed in addition to that required by Monitoring and Reporting Program Order No. R1-2002-0014 shall be reported to the Regional Water Board.

Ordered by _____
Susan A. Warner
Executive Officer

January 24, 2002